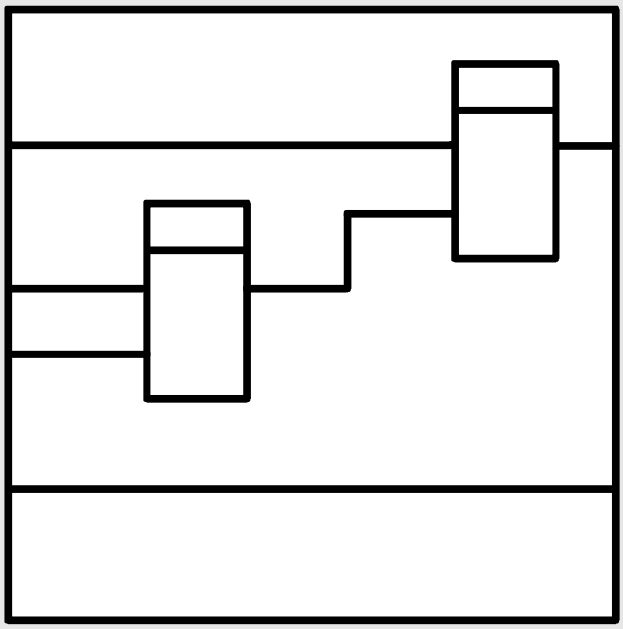
SIMADYN D
Digital Control System

User Manual

Interface board SB31



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User Manual, Interface board SB31

Edition		Edition status
1	Interface board SB31	11.93
2	Interface board SB31	09.94
3	Interface board SB31	05.95

We have checked the contents of this Manual to ensure that they coincide with the described hardware and software. However, deviations cannot be completely ruled-out, so we cannot guarantee complete conformance. However, the information in this document is regularly checked and the necessary corrections included in subsequent editions. We are thankful for any recommendations or suggestions.

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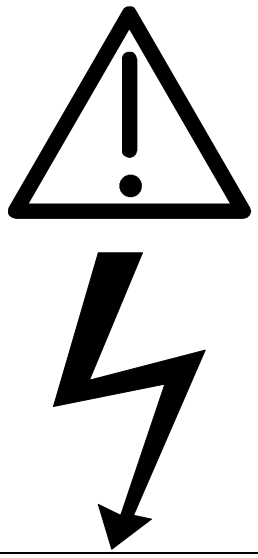
N O T E !

The information in this Manual does not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met in connection with installation, operation or maintenance.

Should further information be desired or should particular problems arise which are not covered sufficiently for the purchaser's purposes, please contact your local Siemens office.

Further, the contents of this Manual shall not become a part of or modify any prior or existing agreement, committment or relationship. The sales contract contains the entire obligation of Siemens. The warranty contained in the contract between the parties is the sole warranty of Siemens. Any statements contained herein do not create new warranties nor modify the existing warranty.

Warning information



W A R N I N G !

Electrical equipment has components which are at dangerous voltage levels.

If these instructions are not strictly adhered to, severe bodily injury and material damage can result.

Only appropriately qualified personnel may work on this equipment or in its vicinity.

This personnel must be completely knowledgeable about all the warnings and service measures according to this User Manual.

The successful and safe operation of this equipment is dependent on proper handling, installation, operation and maintenance.

Definitions

* **QUALIFIED PERSONNEL**

For the purpose of this User Manual and product labels, a „Qualified person“ is someone who is familiar with the installation, mounting, start-up and operation of the equipment and the hazards involved. He or she must have the following qualifications:

1. Trained and authorized to energize, de-energize, clear, ground and tag circuits and equipment in accordance with established safety procedures.
2. Trained in the proper care and use of protective equipment in accordance with established safety procedures.
3. Trained in rendering first aid.

* **DANGER**

For the purpose of this User Manual and product labels, „Danger“ indicates death, severe personal injury and/or substantial property damage will result if proper precautions are not taken.

* **WARNING**

For the purpose of this User Manual and product labels, „Warning“ indicates death, severe personal injury or property damage can result if proper precautions are not taken.

* **CAUTION**

For the purpose of this User Manual and product labels, „Caution“ indicates that minor personal injury or material damage can result if proper precautions are not taken.

* **NOTE**

For the purpose of this User Manual, „Note“ indicates information about the product or the respective part of the User Manual which is essential to highlight.

C A U T I O N !

This board contains components which can be destroyed by electrostatic discharge. Prior to touching any electronics board, your body must be electrically discharged. This can be simply done by touching a conductive, grounded object immediately beforehand (e.g. bare metal cabinet components, socket protective conductor contact).

W A R N I N G !

Hazardous voltages are present in this electrical equipment during operation.

Non-observance of the safety instructions can result in severe personal injury or property damage.

It is especially important that the warning information in all of the relevant Operating Instructions are strictly observed.

1. Ordering information

SB31: 6DD 1681- 0DJ1

2. Function description

The SB31 interface board is used in the SIMADYN D system as changeover function for the SB30 and SA30 output boards. The SB30 and SA30 interface boards switch the output signals of two redundant SIMADYN D systems over when a system fails. The SB31 interface board evaluates up to eight output signals of the two redundant SIMADYN D systems, and supplies the changeover signal for the SB30 and SA30 interface boards when the active system fails. If the redundant system has also failed, a changeover is not made. The eight associated binary inputs of the interface board must be at a high signal level in order to be able to identify correct operation of the SIMADYN D system. The SIMADYN D system is identified as being faulty if one input does not have a high signal level.

Yellow LED 1 is lit if the active system is operating correctly. Yellow LED 2 is lit, if the interface board initiates a changeover to the redundant SIMADYN D system.

24 V (1P, 1M) is provided via X3 for the board power supply. The supply voltage is indicated using a green LED (P). If there is a short circuit on the interface board, the red LED (F) is is lit. The voltage 1P (+), 1M (G) for the supply can be used as input signal via test socket X5.

3. Board design

- Housing can be snapped onto a mounting rail
- 2 terminals (X3) for connecting the power supply voltage
- 16 terminals (X2) for binary signals of the two SIMADYN D systems
- 2 terminals (X2) for connecting a second power supply.
- 2 terminals (X2) for the control output
- Test socket with output 1P(+), 1M(G)
- Display LED:
  - green: 1P, 1M supply available on the SIMADYN D side
  - red: 1P, 1M supply short-circuited (fault)
  - yellow: Active (1)- or redundant SIMADYN D system (2) switched through to the outputs of the SB30 or SA30 interface boards.

4. Application information

24V binary signals are permissible
No standard cable sets are available for the connection between SIMADYN D systems and the interface board.

5. Technical data

5.1. General data

INSULATION GROUP	acc. VDE 0160/Draft, came into force 12/90, 60V DC rated insulation voltage
AMBIENT TEMPERATURE	0 to 55 ^{O}C
STORAGE TEMPERATURE	-40 to 70 ^{O}C
HUMIDITY CLASS acc. to DIN 40040	F
DEGREE OF PROTECTION acc. to DIN 40050	IP00
MECHANICAL STRESSING	acc. to SN 29010, Class 12
MOUNTING SYSTEM	can be snapped onto mounting rails
DIMENSIONS	118mm*135mm*42mm
WEIGHT	approx. 310g

5.2. Electrical data

POWER SUPPLY VOLTAGE V_V AT X3	24V (20-30V)
CURRENT DRAIN AT X3 WITHOUT BINARY INPUTS	60mA
CURRENT DRAIN OF A BINARY INPUT	7.2mA
OUTPUT CONTROL VOLTAGE	0V/(U_V-1.15)V
OUTPUT CONTROL CURRENT	max. 8mA (4 interface modules SB30 or SA30 can be controlled), 50 mA at short-circuit

6. Connector assignment

6.1. Assignment, screw connector X2

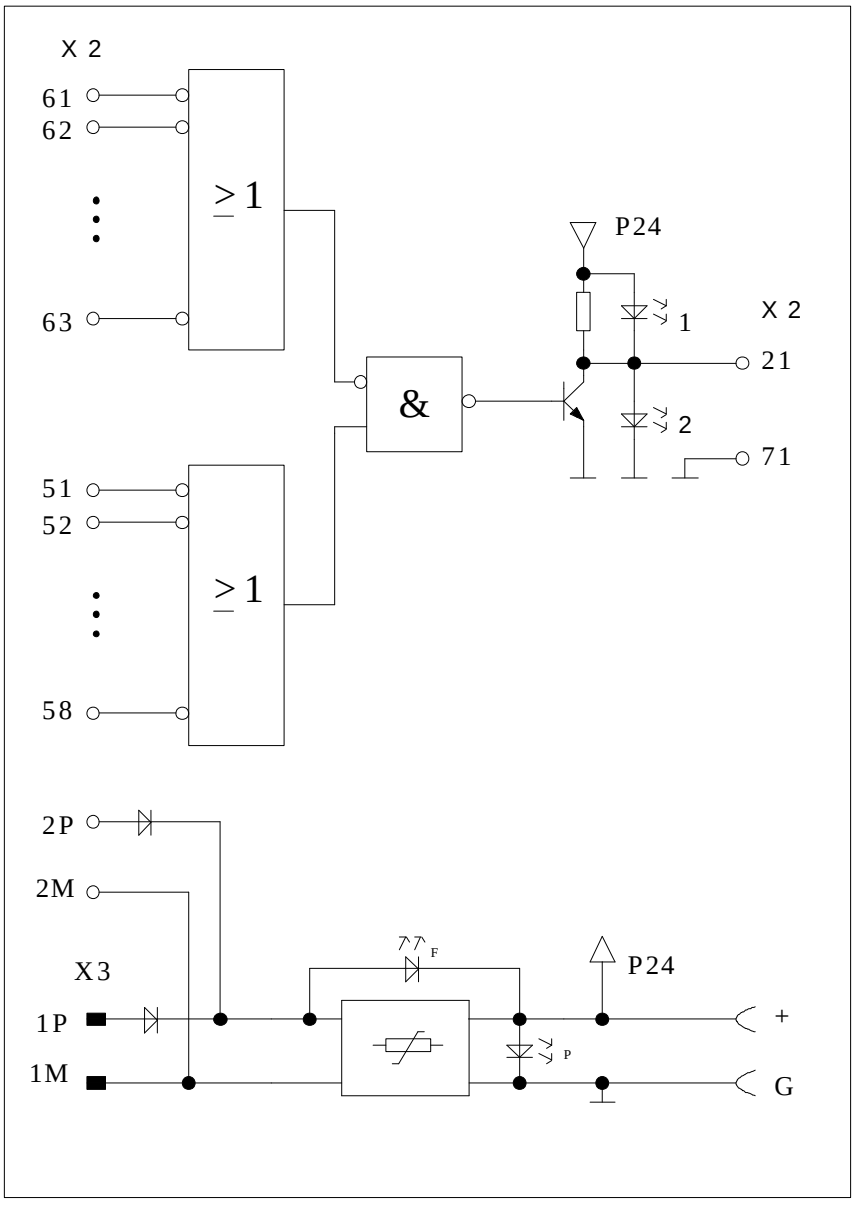
Terminal at X2	Function
51	Monitoring signal 1, active system.
52	Monitoring signal 2, active system
53	Monitoring signal 3, active system
54	Monitoring signal 4, active system
55	Monitoring signal 5, active system
56	Monitoring signal 6, active system
57	Monitoring signal 7, active system
58	Monitoring signal 8, active system
61	Monitoring signal 1, redund. system
62	Monitoring signal 2, redund. system
63	Monitoring signal 3, redund. system
64	Monitoring signal 4, redund. system
65	Monitoring signal 5, redund. system
66	Monitoring signal 6, redund.system
67	Monitoring signal 7, redund. system
68	Monitoring signal 8, redund. system
2P	24V, second power supply
2M	0V, second power supply
21	Changeover sig. 0V/24V for SB30 and SA30
71	Reference potential for changeover signal

6.2. Assignment, screw connector X3

Terminal at X3	Function
1P	24V power supply
1M	0V power supply

7. Attachments

7.1. Block diagram



7.2. Dimension drawing

Dimension drawing 3SE 465 681.9038.10 MB

8. ECB instructions

Components which can be destroyed by electrostatic discharge (ECB)

Generally, electronic boards should only be touched when absolutely necessary.

The human body must be electrically discharged before touching an electronic board. This can be simply done by touching a conductive, grounded object directly beforehand (e.g. bare metal cubicle components, socket outlet protective conductor contact.

Boards must not come into contact with highly-insulating materials - e.g. plastic foils, insulated desktops, articles of clothing manufactured from man-made fibers.

Boards must only be placed on conductive surfaces.

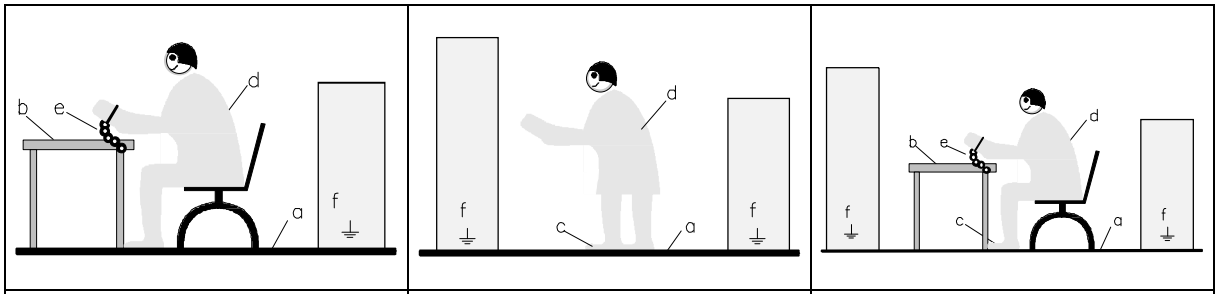
When soldering, the soldering iron tip must be grounded.

Boards and components should only be stored and transported in conductive packaging (e.g. metalized plastic boxes, metal containers).

If the packing material is not conductive, the boards must be wrapped with a conductive packing material, e.g. conductive foam rubber or household aluminum foil.

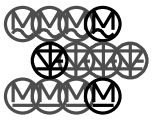
The necessary ECB protective measures are clearly shown in the following diagram.

a = Conductive floor surface
b = ECB table
c = ECB shoes
d = ECB overall
e = ECB chain
f = Cubicle ground connection



Seated	Standing	Standing/sitting

Drives and Standard Products
Motors and Drives Systems Group
Postfach 3269, D-91050 Erlangen



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